

REMARKS

Claims 2, 4, 10-12 are currently pending in the application. Claims 1, 3, 5-9 and 13 are canceled and claims 2, 4 and 10-12 are amended. Claim 2 has been amended to include the features of claims 1, 6 and 8 and claim 4 has been amended to include the features of claims 1 and 9. Reconsideration of the rejected claims in view of the above amendments and the following remarks is respectfully requested.

Present Amendment is proper for entry

Applicant respectfully submits that the instant amendment is proper for entry after final rejection. Applicant notes that no question of new matter is presented nor are any new issues raised in entering the instant amendment of the claims and that no new search would be required. Moreover, Applicant submits that the instant amendment places the application in condition for allowance, or at least in better form for appeal. Accordingly, Applicant requests the Examiner to enter the instant amendment, consider the merits of the same, and indicate the allowability of the present application and each of the pending claims. Applicant notes, in particular, that claims 2 and 4 have been amended to include the already considered features of claims 1, 6, 8 and 9. Furthermore, the Amendment does not add more claims than were previously pending.

Response to the Examiner's "Response to Arguments"

On pages 5-7 of the Final Office Action, the Examiner makes numerous assertions which are unsupported by the prior art documents as follows:

(A) At the top of pages 6 and 7 of the Final Office Action, the Examiner asserts that he does not rely on the invention of Luckevich and instead relies on the prior art discussed in Luckevich on col. 5, lines 65-67 and col. 6, lines 1-2. This assertion is not understood. The noted language of Luckevich discusses Figs. 3 and 4 which are described on col. 2, lines 1-4 of Luckevich as a state transition diagram of the DRP and the DRP controller "of the present invention" (emphasis added).

(B) The Examiner continues to maintain that col. 5, lines 65-67 and col. 6, lines 1-2 discloses the brake force distribution control recited in claims 1 and 13. This assertion is simply not correct. Claims 1 and 13 recite that the brake force distribution control is executed as part of an anti-lock braking system. Luckevich, on the other hand, does not operate as such and instead specifically states the following:

The DRP system will provide control of rear brake pressure for all braking conditions where ABS is not required. If during DRP activity, the front (or rear) channels require ABS activity, then DRP control is suspended and the rear channel(s) perform the required ABS control. During normal braking, the activation and de-activation of the DRP mechanism is dependent entirely on the conditions of the stop. DRP will only activate if required and can be preceded or superseded by ABS activity. If ABS activity is terminated before the vehicle has come to a complete stop, then DRP will assume control of the rear brake, by either maintaining the isolation of the rear brake pressure, re-applying pressure or de-isolating and terminating control. ABS activity is generally desirable upon detection of wheel instability or an incipient skid condition. What constitute wheel instability or an incipient skid condition may differ among different ABS implementations but, in general, exists if a predetermined wheel slip is achieved while wheel deceleration exceeds a predetermined limit. Wheel slip is calculated based on the difference between wheel speed and a calculated wheel speed reference (emphasis added).

As the above-noted language clearly indicates, DRP is used only when ABS is not required and can be superseded by ABS.

(C) The Examiner's reliance on col. 5, lines 65-67 and col. 6, lines 1-2 of Luckevich as disclosing the brake force distribution control recited in claims 1 and 13 is without merit. Col. 5, line 62 to col. 6, line 12 of Luckevich merely states the following:

During DRP control, the rear channels are isolated from the master cylinder and therefore can be at a much lower pressure relative to the master cylinder pressure. If the rear channels are de-isolated by the termination of DRP immediately after the vehicle has reached the low speed limit, then there will be a sudden drop of the brake pedal. This pedal drop is caused by the equalization of brake pressure between the rear channels and the master cylinder. By imposing a delay, typically on the order of 1 second, there is typically enough time for the vehicle to come to a complete stop and for the driver to relax pressure on the brake pedal. In this case, the de-isolation of the rear channel will not be as noticeable to the driver, since the master cylinder pressure will typically have been reduced by this time and more closely match that of the rear brakes. Until the delay is complete, flow return to the main loop from block 116. When the delay is complete, then flow passes to block 112 to terminate the DRP control..

Such language discusses how a time delay can be utilized before the DRP control is deactivated by ABS activation, i.e., before the brake pressure is returned to the rear wheels for ABS. Contrary to the Examiner's assertions, this language does not discuss that a control unit finishes the brake force distribution control as a vehicle stops and after a frontward force applied to the vehicle is released and prior to a stop of the vehicle. Nor has the Examiner adequately explained how such language can be interpreted to disclose this feature.

(D) The Examiner, in fact, appears unsure that Luckevich discloses the brake force distribution control recited in claims 1 and 13. While the Examiner has identified certain language which allegedly discloses this feature, the Examiner states that "[t]his appears to mimic the instant invention" (emphasis added). The Examiner has apparently forgotten that it is the Examiner who bears the initial burden of

demonstrating that a prior art document discloses each recited feature. By the Examiner himself expressing such doubt about what Luckevich actually discloses, it is submitted that the Examiner has not set forth a *prima facie* case of anticipation.

(E) On pages 6 and 7 of the Final Office Action, the Examiner asserts that he relies on only condition 4 of HARA as disclosing "a situation similar to the prior art apparatus described by Luckevich .. and the instant invention disclosed by the applicant" (emphasis added). This assertion is revealing. As explained above, the noted language of Luckevich discusses Fig. 3 which is described on col. 2, lines 1-2 of Luckevich as "a state transition diagram of the DRP of the present invention" (emphasis added), and not the prior art as asserted by the Examiner. Furthermore, the Examiner's assertion betrays the Examiner's focus on which applicant allegedly discloses when the correct focus should be on which applicant is claiming. A prior art rejection must address the claims and not the disclosure of a patent application.

(F) While the Examiner has asserted that condition 4 alone discloses the brake force distribution control recited in claims 1 and 13, the Examiner has failed to explain how such disclosure teaches the recited feature. Condition 4 of Hara is describe on col. 7, lines 50-52 as follows:

(4) The condition that arises when the estimated body velocity V_{SOF} becomes smaller than a predetermined value, for example, 6 km/h.

Such language discusses a possible velocity when brake force distribution control can be terminated. However, contrary to the Examiner's assertions, this language does not discuss that a control unit finishes the brake force distribution control

as a vehicle stops and after a frontward force applied to the vehicle is released and prior to a stop of the vehicle. Nor has the Examiner adequately explained how such language can be interpreted to disclose this feature.

(G) The Examiner, in fact, also appears unsure that Hara discloses the brake force distribution control recited in claims 1 and 13. While the Examiner has identified certain language which allegedly discloses this feature, the Examiner states that "condition 4 appears to describe a situation similar to ... the instant invention" (emphasis added). The Examiner again has apparently forgotten that it is the Examiner who bears the burden of demonstrating that a prior art document discloses each recited feature. By the Examiner himself expressing such doubt, it is submitted that the Examiner has not set forth a *prima facie* case of anticipation.

(H) Finally, it is notable that the Examiner has used the language "as best understood" is discussing the disclosure of each of Luckevich and Hara. Such comments betray the Examiner's uncertainty as to what the prior art documents actually disclose. Again, such comments suggest that the Examiner is, at best, unsure what is in fact disclosed by each of Luckevich and Hara and demonstrate that the Examiner has not set forth a *prima facie* case of anticipation. Furthermore, such comments suggest that the Examiner does not understand the subject matter of the invention or the disclosure of the prior art references. Given this apparent lack of understanding on the part of the Examiner, it is not understood why the Examiner has chosen to disregard the clear arguments and assertions noted in the expert declaration when the expert has

clearly explained the invention and how it differs from the devices of the applied prior art documents.

35 U.S.C. §102 Rejections

Claims 1-3, 10, 11, and 13 were rejected under 35 U.S.C. §102(b) for being anticipated by U.S. Patent No. 5,632,535 issued to Luckevich *et al.* Claims 1, 4, 5, 10, 11 and 13 were rejected under 35 U.S.C. §102(b) for being anticipated by U.S. Patent No. 5,938,299 issued to Hara *et al.* These rejections are respectfully traversed.

Argument over Luckevich et al.

Applicant again refers the Examiner to the Rule 1.132 Declaration submitted with the previous response wherein Applicant pointed out the deficiencies of Luckevich. Furthermore, Applicant also respectfully traverses this rejection for the reasons already made of record, and reiterated again as follows.

Luckevich discloses a braking system which uses a dynamic rear proportioning (DRP) system in combination with an anti-lock braking system (ABS) (see col. 1, lines 25-27). Luckevich, however, does not disclose or suggest that the disclosed control unit finishes the brake force distribution control as a vehicle stops and after a frontward force applied to the vehicle is released and prior to a stop of the vehicle.

The Examiner has identified col. 5, lines 65-67 of Luckevich as disclosing that the distribution control is terminated immediately after the vehicle speed has reached a low speed limit. Applicant submits, however, that this assertion is beside the point. Applicant is not merely claiming that the control is terminated immediately after the

vehicle speed has reached a low speed limit and submits that the Examiner has improperly characterize the claimed invention. As the Examiner will note from a more careful review of claim 2, this claim instead recites that the control unit finishes the brake force distribution control as a vehicle stops and after a frontward force applied to the vehicle is released and prior to a stop of the vehicle. This language is not the same as terminating the control immediately after the vehicle speed has reached a low speed limit. In fact, there is no language in Luckevich which discloses or suggest this feature of claim 2, and the Examiner has failed to identified any.

Furthermore, claim 2 recites additional features which are clearly distinguishable over the Luckevich. For example, claim 2 further recites that the predetermined time is 300msec and that the predetermined wheel speed is 2km/h. These features are not disclosed in Luckevich. To the contrary, Luckevich discloses a time frame of one second and is silent with regard to the predetermined time being 300msec, much less, that the predetermined wheel speed is 2km/h.

Applicant also submits that the presently claimed invention is different from the system disclosed by Luckevich. As discussed in the expert declaration, Luckevich discloses a system which uses a delay of one second prior to the termination of the brake distribution control. This delay of one second is implemented so that the vehicle can "come to a complete stop and for the driver to relax pressure on the brake pedal" (see col. 6 lines 4-6). Thus, the flow change resulting from the termination of the brake distribution control is not performed until *after* the delay is complete (col. 6, lines 11-12). Accordingly, Applicant submits that the brake distribution control of Luckevich is

terminated only *after* the vehicle has come to a complete stop. In the present invention, the brake distribution control is finished *prior* to a complete stop of the vehicle, e.g., to match the swing back motion of the vehicle from the stopping motion and the swing back motion of the pedal resulting from the brake distribution control being terminated. Thus, the present invention is directed towards a time frame that is explicitly contrary to Luckevich.

Furthermore, as discussed in the expert declaration, the driver of Luckevich is expected to relax pressure on the brake pedal of his own volition to avoid the sudden drop of the brake pedal, (see col. 6, lines 4-6). However, in the present invention, the driver does not have to relax pressure on the brake pedal to avoid the sudden drop of the brake pedal, as the present invention is directed to alleviating this problem. By engineering the system to adjust the timing of the brake control distribution termination process, the sudden drop of the brake pedal can be disguised as part of the swing back motion of the vehicle as the vehicle comes to a complete stop. Thus, unlike the driver of Luckevich, the driver using the presently claimed invention is not expected to relax pressure on the brake pedal of his own volition.

Accordingly, the rejection of claims 2, 10 and 11 as anticipated by Luckevich is improper and should be withdrawn.

Argument over Hara et al.

The Examiner has pointed to the types of conditions, and in particular condition 4, described in col. 7, lines 42-56 of Hara as being anticipatory to the claimed invention. Applicant respectfully disagrees with the Examiner's assertions. The types of conditions

described in Hara simply do not disclose or suggest the combination of features recited in at least claims 2 and 4. In particular, Hara does not disclose or suggest that the disclosed control unit finishes the brake force distribution control as a vehicle stops and after a frontward force applied to the vehicle is released and prior to a stop of the vehicle.

The Examiner has identified col. 7, lines 50-53 of Hara as disclosing that the brake force distribution control is terminated when the vehicle speed or wheel speed falls below a low speed. Applicant submits, however, that this assertion is beside the point. Applicant is not merely claiming that the control is terminated when the vehicle speed or wheel speed falls below a low speed and submits that the Examiner has improperly characterize the claimed invention. Again, a more careful review of claim 2 and 4 demonstrates that claims 2 and 4 instead recite that control unit finishes the brake force distribution control as a vehicle stops and after a frontward force applied to the vehicle is released and prior to a stop of the vehicle. This language is not the same as terminating the control when the vehicle speed or wheel speed falls below a low speed. In fact, there is no language in Hara which discloses or suggest this feature of claim 2 and 4, and the Examiner has failed to identified any.

Again, as discussed in the expert Declaration, regarding condition (1) of Hara, the driver using the presently claimed invention is *not* expected to relax pressure on the brake pedal, and thus this condition does not apply. Regarding condition (2) and (3) of Hara, the Examiner has failed to explain the relevancy of these conditions and thus

Applicant presumes that the Examiner has agreed to their irrelevancy to the present invention.

Regarding conditions (4) and (5) of Hara, these merely relate to situations in which the forward motion of the vehicle is coming to a stop. However, Hara does not discuss the release of the frontward force applied to the vehicle that is recited in claims 2 and 4. More specifically, Hara does not discuss the swing back motion of the vehicle that the present invention is directed towards. In the braking procedure of the present invention, just prior to the stopping of a vehicle, there is a swing back motion as the vehicle jerks to a stop. This is the timing that is described by the release of the frontward force applied to the vehicle. There is no discussion in Hara with regard to employing such a release of the frontward force applied to the vehicle, and thus Applicant submits that Hara does not teach or suggest all of the limitations of the present invention.

Furthermore, claim 2 recites additional features which are clearly distinguishable over the Hara. For example, claim 2 further recites that the predetermined time is 300msec and that the predetermined wheel speed is 2km/h. These features are not disclosed in Hara. To the contrary, Hara discloses a time frame of 15 seconds and a speed of 6 km/h (see col. 7, lines 47-52) and is silent with regard to the predetermined time being 300msec, much less, that the predetermined wheel speed is 2km/h.

Claim 4 also recites additional features are clearly distinguishable over the Hara. For example, claim 4 further recites that the predetermined wheel speed is 2km/h. Again, this features is not disclosed in Hara. To the contrary, Hara instead discloses a

time frame of 15 seconds (see col. 7, lines 47-52) and is silent with regard to the predetermined wheel speed being 2km/h.

Accordingly, the rejection of claims 4, 10 and 11 as anticipated by Hara is improper and should be withdrawn.

Dependent Claims

As to the dependent claims, Applicant submits that claims 10 and 11 depend from distinguishable claim 2. Thus, these claims are also in condition for allowance. These features of these claims are also not shown in the prior art references. For example, neither Luckevich or Hara shows the control finishing prior to the stop of the vehicle.

Accordingly, Applicant respectfully requests that the rejection over claims 10 and 11 be withdrawn.

35 U.S.C. §103 Rejections

Claims 6-8 were rejected under 35 U.S.C. §103(a) for being unpatentable over Luckevich, alone. Claim 9 was rejected under 35 U.S.C. §103(a) for being unpatentable over Hara, alone. Claim 12 was rejected under 35 U.S.C. §1.03(a) for being unpatentable over Luckevich or Hara in view of U.S. Patent No. 6,030,056 to Sawada et al. These rejections are respectfully traversed.

Applicant submits that claim 12 is dependent on distinguishable base claim 2 and is therefore also in condition for allowance. Furthermore, as claims 6-9 have been canceled, the rejection of these claims is now moot.

Regardless, Applicant also submits that the features of these claims are also non-obvious on their own merits. Regarding the rejection of claims 6 and 7, Applicant refers the Examiner to the aforementioned discussion of Luckevich in which it was pointed out that the disclosed brake control termination is carried out *after* the delay of one second.

Regarding the rejection of claims 8 and 9, the predetermined wheel speed of 2km/h was chosen as one example of the time that still allows for the brake fluid to even out after the valves open but before the complete stopping of the vehicle. That is, the predetermined wheel speed of 2km/h was chosen as one example for the cutoff speed for the initiation of the brake force distribution control termination process, wherein the drop of the pedal can be masked with the swing back motion of the vehicle as the brake force distribution control is finished. Applicant submits that neither Luckevich nor Hara render the present invention obvious with regard to claims 8 and 9 since they provide no motivation for selecting 2km/h as a predetermined speed for initiating the brake force distribution control termination process.

With regards to the rejection of claim 12, Applicant acknowledges that Sawada teaches pitch control. However, the Examiner has failed to explain how Sawada cures the above-noted deficiencies of each of Luckevich or Hara. Applicant notes that in the present invention, the pitching motion is combined with the termination of the brake control distribution process so that the drop of the brake pedal is not as noticeable to the driver and in a particular recited manner. Sawada, like Luckevich or Hara, does not disclose or suggest that control unit finishes the brake force distribution control as a

vehicle stops and after a frontward force applied to the vehicle is released and prior to a stop of the vehicle. Nor has the Examiner demonstrated otherwise. Thus, Applicant submits that the combination of Sawada and Luckevich or Hara would not render obvious the present invention.

Accordingly, Applicant respectfully requests that the rejection over at least claim 12 be withdrawn.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant submits that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicant hereby makes a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Deposit Account No. 19-0089.

Respectfully submitted,
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